

US-CL-CURRENT: 435/5; 435/975, 530/387.9, 530/388.3, 530/389.4[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw. D](#)**□ 10. Document ID: US 5674835 A**

L3: Entry 10 of 12

File: USPT

Oct 7, 1997

US-PAT-NO: 5674835

DOCUMENT-IDENTIFIER: US 5674835 A

TITLE: Papillomaviral expression inhibitors

DATE-ISSUED: October 7, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Androphy; Elliot J.	Natick	MA		
Lowy; Douglas R.	Washington	DC		
Schiller; John T.	Silver Springs	MD		

US-CL-CURRENT: 514/2; 435/235.1, 514/44[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw. D](#)[Clear](#) | [Generate Collection](#) | [Print](#) | [Fwd Refs](#) | [Bkwd Refs](#) | [Generate OACS](#)

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## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Lowy</u> ; Douglas R.	Washington	DC		
Schiller; John T.	Silver Spring	MD		
Kirnbauer; Reinhard	Bethesda	MD		

US-CL-CURRENT: 424/204.1; 424/186.1, 435/252.3, 435/254.2, 435/320.1, 435/69.1,  
435/69.3, 536/23.72

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8. Document ID: US 5716620 A

L3: Entry 8 of 12

File: USPT

Feb 10, 1998

US-PAT-NO: 5716620

DOCUMENT-IDENTIFIER: US 5716620 A

\*\* See image for Certificate of Correction \*\*

TITLE: Self-assembling recombinant papillomavirus capsid proteins

DATE-ISSUED: February 10, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Lowy</u> ; Douglas R.	Washington	DC		
Schiller; John T.	Silver Spring	MD		
Kirnbauer; Reinhard	Bethesda	MD		

US-CL-CURRENT: 424/186.1; 424/204.1, 424/277.1, 435/69.3

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMIC](#) | [Drawn D](#)

9. Document ID: US 5709996 A

L3: Entry 9 of 12

File: USPT

Jan 20, 1998

US-PAT-NO: 5709996

DOCUMENT-IDENTIFIER: US 5709996 A

\*\* See image for Certificate of Correction \*\*

TITLE: Self-assembling recombinant papillomavirus capsid proteins

DATE-ISSUED: January 20, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Lowy</u> ; Douglas R.	Washington	DC		
Schiller; John T.	Silver Spring	MD		
Kirnbauer; Reinhard	Bethesda	MD		

US-PAT-NO: 5855891

DOCUMENT-IDENTIFIER: US 5855891 A

TITLE: Ichimeric papillomavirus-like particles

DATE-ISSUED: January 5, 1999

## INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Lowy</u> ; Douglas R.	Bethesda	MD		
Schiller; John T.	Silver Spring	MD		
Greenstone; Heather	Silver Spring	MD		

US-CL-CURRENT: 424/192.1; 424/204.1, 435/235.1, 435/236, 435/69.1

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KMC</a>	<a href="#">Drawn D</a>
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 6. Document ID: US 5756284 A

L3: Entry 6 of 12

File: USPT

May 26, 1998

US-PAT-NO: 5756284

DOCUMENT-IDENTIFIER: US 5756284 A

TITLE: Self-assembling recombinant papillomavirus capsid proteins

DATE-ISSUED: May 26, 1998

## INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Lowy</u> ; Douglas R.	Washington	DC		
Schiller; John T.	Silver Spring	MD		
Kirnbauer; Reinhard	Bethesda	MD		

US-CL-CURRENT: 435/5; 424/130.1, 424/186.1, 424/199.1, 424/204.1, 435/235.1,  
435/69.3, 530/350, 977/DIG.1

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KMC</a>	<a href="#">Drawn D</a>
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 7. Document ID: US 5744142 A

L3: Entry 7 of 12

File: USPT

Apr 28, 1998

US-PAT-NO: 5744142

DOCUMENT-IDENTIFIER: US 5744142 A

TITLE: Self-assembling recombinant papillomavirus capsid proteins

DATE-ISSUED: April 28, 1998

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Drawn D
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3. Document ID: US 5985610 A

L3: Entry 3 of 12

File: USPT

Nov 16, 1999

US-PAT-NO: 5985610

DOCUMENT-IDENTIFIER: US 5985610 A

TITLE: Self-assembling recombinant papillomavirus capsid proteins

DATE-ISSUED: November 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Lowy</u> ; Douglas R.	Washington	DC		
Schiller; John T.	Silver Spring	MD		
Kirnbauer; Reinhard	Bethesda	MD		

US-CL-CURRENT: 435/69.3; 435/320.1, 435/325, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Drawn D
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4. Document ID: US 5871998 A

L3: Entry 4 of 12

File: USPT

Feb 16, 1999

US-PAT-NO: 5871998

DOCUMENT-IDENTIFIER: US 5871998 A

TITLE: Self-assembling recombinant papillomavirus capsid proteins

DATE-ISSUED: February 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Lowy</u> ; Douglas R.	Washington	DC		
Schiller; John T.	Silver Spring	MD		
Kirnbauer; Reinhard	Bethesda	MD		

US-CL-CURRENT: 435/235.1; 424/186.1, 424/204.1, 435/252.3, 435/254.2, 435/320.1,  
435/456, 435/69.1, 435/69.3, 530/350, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Drawn D
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5. Document ID: US 5855891 A

L3: Entry 5 of 12

File: USPT

Jan 5, 1999

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1. Document ID: US 6719978 B2

L3: Entry 1 of 12

File: USPT

Apr 13, 2004

US-PAT-NO: 6719978

DOCUMENT-IDENTIFIER: US 6719978 B2

\*\* See image for Certificate of Correction \*\*

TITLE: Virus-like particles for the induction of autoantibodies

DATE-ISSUED: April 13, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schiller; John T.	Silver Spring	MD		
Chackerian; Bryce	Chevy Chase	MD		
<u>Lowy</u> ; Douglas R.	Bethesda	MD		

US-CL-CURRENT: 424/199.1, 424/133.1, 424/143.1, 424/144.1, 424/147.1, 424/159.1,  
424/184.1, 424/194.1, 424/204.1, 435/174, 435/235.1, 435/472, 530/350

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2. Document ID: US 6599739 B1

L3: Entry 2 of 12

File: USPT

Jul 29, 2003

US-PAT-NO: 6599739

DOCUMENT-IDENTIFIER: US 6599739 B1

TITLE: Infectious papillomavirus pseudoviral particles

DATE-ISSUED: July 29, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Lowy</u> ; Douglas R.	Bethesda	MD		
Schiller; John T.	Silver Spring	MD		
Roden; Richard B.	Washington	DC		

US-CL-CURRENT: 435/325, 435/235.1, 435/320.1, 435/69.1, 435/91.4



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1: Cell. 1986 Sep 12;46(6):895-904.

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## Self-assembly of purified polyomavirus capsid protein VP1.

Salunke DM, Caspar DL, Garcea RL.

The polyomavirus major capsid protein VP1, purified after expression of the recombinant gene in *E. coli*, was isolated as oligomers resembling the dissociated capsomeres derived from viral capsids. Image analysis of low-dose electron micrographs demonstrates that these VP1 oligomers are exclusively pentamers. The purified VP1 pentamers associated to form capsid-like assemblies and polymorphic aggregates at high ionic strength. The capsid-like assemblies were stabilized at low ionic strength by the addition of calcium. Self-assembly of the unmodified, recombinant DNA-generated VP1 implies that the posttranslational charge modifications of VP1 and the minor virion protein components, VP2 and VP3, are not essential for capsid formation. The nonequivalently related subunits of the penta- and hexavalent capsomeres therefore must spontaneously switch their bonding specificity during assembly.

PMID: 3019556 [PubMed - indexed for MEDLINE]

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